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Lending a Hand: Healthcare Cost and Treatment Impact of Peer Recovery Services, A Review of the Literature

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Introduction

- Substance abuse has become one of the largest healthcare crises in the country and have been placing a significant burden on the healthcare system. Substance abuse alone has an estimated cost of $740 billion annually when combining crime, lost productivity and healthcare costs (NIDA, 2017).
- One of the main barriers to treatment is understanding how to apply what is learned in treatment to the real world, which may require the acquisition of skills and access to resources.
- Peer mentors are often involved in the supportive treatment of chronic health conditions, substance abuse recovery and/or trauma recovery (SAMSHA, 2018).
- Soloman (2004) found that peer support provides a valuable service to many patients in treatment, as well as filled in the gaps in mental health delivery systems.
- Peer counseling, when mixed with mobile phone reminders, was significant in improving adherence and treatment outcomes among HIV positive patients (Abdulrahman et al., 2017).

Aims

- Conduct a systematic literature review around healthcare cost and treatment outcomes of peer recovery services.
- Evaluate the literature evidence on the hypothesis that peer recovery services reduce healthcare cost.
- The personal aims of this project is to gain valuable experience and skill in the systematic literature review methodology, as well as gain a deeper understanding around the evidence of peer recovery services.

Methods

The procedures followed were derived from Khan et al. (2003)'s five steps of systematic literature.

1. Framing the Question: Do peer recovery services reduce healthcare costs and improve treatment outcomes in mental health and substance abuse populations?
2. Identify Relevant Work: Articles were searched on the PubMed databased using the following search terms:
   A. ((peer recovery [Title/Abstract] OR peer support [Title/Abstract] OR peer services [Title/Abstract])) AND (substance use [Title/Abstract] OR substance abuse [Title/Abstract] OR addiction [Title/Abstract] OR mental health [Title/Abstract]))
   B. Articles were included if they met following criteria:
      1) The primary dependent outcome either treatment outcomes and/or healthcare costs.
      2) The sample consisted of people who use substances and/or people with mental health concerns.
      3) A structured, in-person peer support service was administered in the study.
3. Assess the quality of the studies: Articles that met inclusion criteria were assessed for quality through Khan et al (2003)'s quality assurance measure.
4. Step four summarize the literature

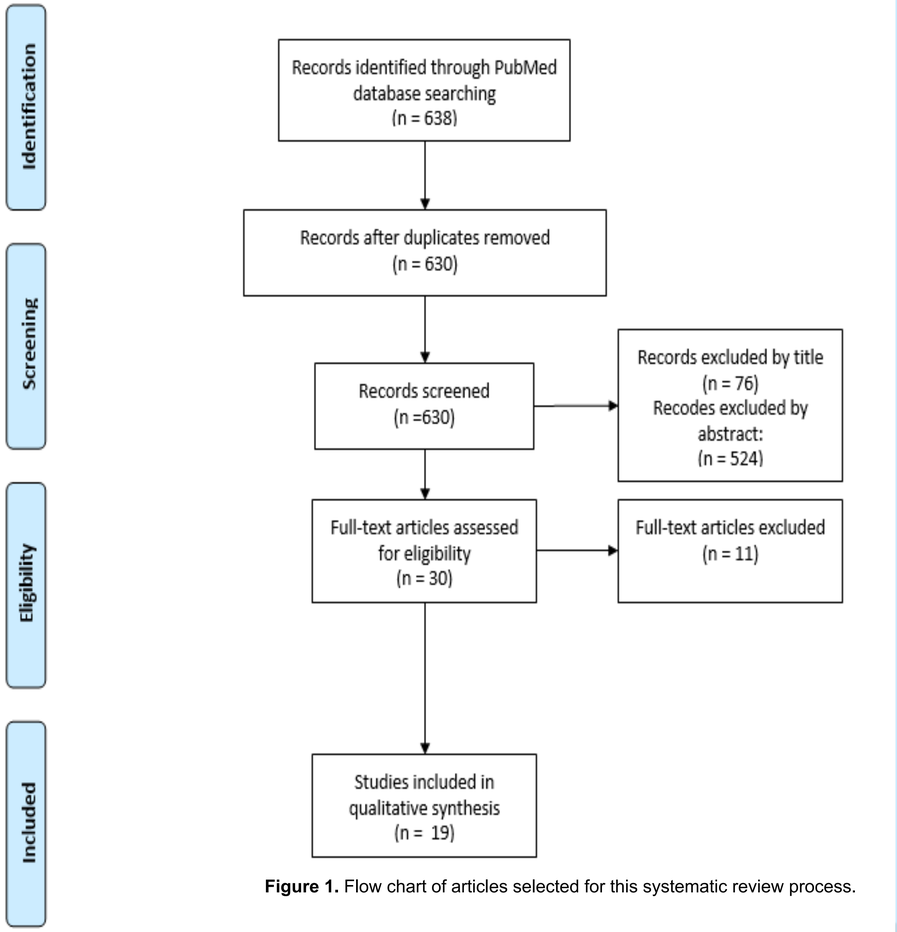

Figure 1. Flow chart of articles selected for this systematic review process.

Results

- 19 articles met inclusion criteria for review
  - •15 referenced mental health treatment outcomes
  - •1 referenced substance use outcomes
  - •5 referenced impacts to healthcare cost
- 11 of the 15 articles on mental health treatment outcomes reported significant improvements and/or reduction of symptoms.
- The one article on substance use found a significant increase in outpatient service engagement and a greater sustained reduction in alcohol use long term.
- 3 of the 4 articles on health care cost found no significant reduction, with one article finding significant increases in outcomes associated with healthcare cost.

References

Abdulrahman, S. A., Rampal, L., Ibrahim, F., Radhakrishnan, A. P., Shahar, H. K., & Othman, N. (2017). Mobile phone reminders and peer counseling improve adherence and treatment outcomes of patients on ART in Malaysia: A randomized clinical trial. PLOS ONE, 12(5), e0177698. https://doi.org/10.1371/journal.pone.0177698

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Citation	Outcomes	Citation	Outcomes
(Boardman, McCann, & Kerr, 2014)	**Design:** Quasi-experimental time-series with n = 22 **Results:** Significant improvements in medication adherence, negative symptoms and overall mental state between baseline and week 8 follow-up. Findings were maintained at week 14 follow-up.	(Landers & Mei Zhou, 2014)	**Design:** Retrospective case control with n = 1,910 in PRS group and 3,820 in control group. **Results:** Peer support associated with $5,991 high total Medicaid cost, $2,100 higher prescription drug cost, $5,116 higher professional service cost and $1,225 lower facility cost.
(Byrom, 2018)	**Design:** Cohort longitudinal with n = 65 **Results:** High attrition, 34% completed all 6 sessions. Those that did complete had a significant increases in their mental well-being. **Potential Bias:**	(Moir, Henning, Hassed, Moyes, & Elley, 2016)	**Design:** Randomized trial with n = 142 in PRS group and n = 133 in control group **Results:** No statistical significance between PRS and control in any mental health outcomes.
(Castellanos, Capo, Valderrama, Jean-Francois, & Luna, 2018)	**Design:** Case control with n = 367 in PRS group and n = 1468 in treatment as usual group. **Results:** PRS group used more ambulatory/lower levels of care, displayed more functional difficulties and had more frequent crisis stabilization unit admissions.	(O'Connell, Flanagan, Delphin-Rittmon, & Davidson, 2017)	**Design:** Randomized trial with n = 42 in PRS group, n = 47 in treatment as usual and n = 48 in training program without PRS. **Results:** At 3 months the PRS group resulted in higher levels of relatedness, self-criticism and outpatient service use. At 9 months, PRS was significant at reducing alcohol use.
(Chapin et al., 2013)	**Design:** Quasi-experimental pre-post with n = 32. **Results:** Significant improvement in depression, but not for anxiety.	(O'Connell et al., 2018)	**Design:** Randomized trial with n = 83 in PRS group and n = 66 in standard care. **Results:** High attrition. PRS group had greater reductions in substance use and psychiatric symptoms and greater improvements in functioning.
(Chinman et al., 2018)	**Design:** Quasi-experimental pre-post with n = 140. **Results:** Veterans with higher peer specialist engagement were more likely than controls to show reliable positive change in psychiatric symptoms, but not in hope.	(Prevatt, Lowder, & Desmarais, 2018)	**Design:** Quasi-experimental pre-post with n = 45 in PRS and n = 152 in comparison group. **Results:** Reductions in depression symptoms with significant interactions for time x complications and time x delivery methods.
(Eisen et al., 2012)	**Design:** Randomized design with n = 240 with three groups: peer led group, clinician led recovery group and a usual treatment group **Results:**. There were no significant differences in improvements among the groups.	(Simpson et al., 2014)	**Design:** Randomized controlled trial with n = 23 in PRS group and n = 23 in care as usual group. **Results:** No significant changes between groups. PRS was analyzed to be more cost effective for a modest positive change in a measure of hopelessness.
(Fukui, Davidson, Holter, & Rapp, 2010)	**Design:** Quasi-experimental pre-post with n = 47 **Results:** Significant improvements in self-esteem, self-efficacy, social support, spiritual well-being and psychiatric symptoms.	(Travis et al., 2010)	**Design:** Quasi-experimental pre-post design with n = 32. **Results:** Significant improvements in measures of disability, quality of life and psychological health. Qualitative analyses indicate the PRS group found meaning and support through interactions with their peers.
(Ha, 2016)	**Design:** Control group design with n = 31 **Results:** Significant improvements in recovery and symptoms of peer providers.	(Valenstein et al., 2015)	**Design:** Randomized trial design with n = 200 in PRS group and n = 243 in enhanced usual care. **Results:** Substantial improvements in depressive symptoms, functional limitations and low quality of life at baseline. No differences between groups at 6 months.
(Johnson et al., 2018)	**Design:** Randomized controlled trial with n = 221 in PRS group and 220 in control group. **Results:** Reduction in readmission into acute care.	(Wrobleski, Walker, Jarus-Hakak, & Suto, 2015)	**Design:** Mixed methods pilot RCT with total n = 15 between PRS group or MHW group. **Results:** PRS group did not improve more than the MHW at baseline or 6 months.
(Landers & Zhou, 2011)	**Design:** Retrospective case control with n = 1,910 in PRS group and n = 33,758 in control group. **Results:** PRS was associated with increased likelihood of crisis stabilization and decreased likelihood of psychiatric hospitalization		

Table 1. List of included article citations with study design, potential identified biases and overview of results.

Conclusions

- The goal of the study was to examine the published literature to assess peer recovery services efficacy on mental health and substance use treatment outcomes.
- Results indicate that PRS has been shown to increase mental health treatment outcomes.
- PRS may have the potential to increase substance use treatment outcomes, however more research is needed.
- PRS does not seem to have evidence to support that it can reduce healthcare related costs.
- Gaps and recommendations for future research
  - High attrition and difficulty recruiting is a barrier to research.
  - More research is needed to conclude PRS evidence in substance use treatment.
  - Research is needed to determine PRS role in co-morbidity substance use and mental health.
  - More robust longitudinal research is needed to further conclude PRS role in healthcare cost impact.